Sun and Moon

1-3 The student will demonstrate an understanding of the features of the sky and the patterns of the Sun and the Moon. (Earth Science)

NOTE TO TEACHER: It is essential to keep this unit as basic as possible. Do not go beyond the recommendations since a child at this age is not developmentally ready to understand astronomy concepts. They will take the foundational knowledge they learn at this grade and expand on it in 4th grade.

1-3.1 Compare the features of the day and night sky.
Taxonomy level: 2.6-A Understand Factual Knowledge

Previous/Future knowledge: This is the first time that students have been introduced to features of the day and night sky. This is a foundational concept that will be further developed in 4th grade (4-3.5) when students explain how day and night occur.

It is essential for students to know that there are features that can be found in the day sky and in the night sky.

Day sky
- The day sky is when there is enough light from the Sun to see.
- The Sun is the only star seen in the day sky.
- Examples of features found in the day sky might include the Sun, the Moon, clouds, birds, or airplanes.

NOTE TO TEACHER: Do NOT allow students to look directly at the Sun.

Night sky
- The night sky is when light from the Sun can no longer be seen.
- Examples of features found in the night sky might include the Moon, clouds, airplanes, or stars.

It is not essential for students to go beyond this comparison.

Assessment Guidelines:
The objective of this indicator is to *compare* day and night sky features; therefore, the primary focus of assessment should be to detect similarities and differences between the day and night sky. However, appropriate assessments should also require students to *exemplify* features that would occur in the day sky, night sky, or both; or *recognize* specific features on a diagram.

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1-3 The student will demonstrate an understanding of the features of the sky and the patterns of the Sun and the Moon. (Earth Science)

1-3.2 Recall that the Sun is a source of heat and light for Earth.
Taxonomy level: 1.2-A Remember Factual Knowledge

Previous/Future knowledge: This is the first time that students have been introduced to the concept of the Sun as a source of heat and light. This is foundational knowledge that will be further developed in 4th grade when students explain how the Sun affects Earth (4-3.3).

It is essential for students to know that it is the Sun is a star in the sky that provides energy in the form of heat and light.

- The heat from the Sun provides warmth for Earth.
- Without the Sun, Earth would be too cold to live on.
- The light from the Sun is needed by plants so that they can make their own food.
- The Sun also provides light so we can see things around us.

It is not essential for students to measure the effects of the Sun's heat on Earth materials (for example, soil and water).

Assessment Guidelines:
The objective of this indicator is to *recall* that the Sun is a source of heat and light for Earth; therefore, the primary focus of assessment should be to remember that the Sun warms Earth and provides light for organisms.

Sun and Moon

1-3 The student will demonstrate an understanding of the features of the sky and the patterns of the Sun and the Moon. (Earth Science)

1-3.3 Recognize that the Sun and the Moon appear to rise and set.
Taxonomy level: 1.1-A Remember Factual Knowledge

Previous/Future knowledge: This is the first time that students are introduced to the concept of the Sun and the Moon moving in the sky. This is foundational knowledge that will be further developed in 4th grade when students explain how the tilt of Earth causes seasons (4-3.4) and how the Earth's movement around the Sun causes day and night (4-3.5). In 8th grade (8-4.4), students will explain the motions of Earth and the Moon and the effects of these motions as they orbit the Sun including day and year.

It is essential for students to know that because Earth turns (*rotates*) the Sun and the Moon appear to rise and set.

- The Sun appears to move across the sky during the day. It is lower in the sky in the morning (sunrise) and in the evening (sunset).
- The Moon also appears to rise and set. It is lower in the sky during moonrise and moonset. However, moonrise or moonset can be seen during the day or night.

NOTE TO TEACHER: Inform students that they should **not** look at the Sun. Because of the safety issues involved with viewing the location of the Sun, it is best to observe the rising and setting of the Sun through some sort of simulation (for example, a video, united streaming or a computer simulation). Students can safely view the movements and position of the Moon.

It is not essential for students to know that Earth takes one year to travel (revolve) around the Sun.

Assessment Guidelines:
The objective of this indicator is to *recognize* that the Sun and the Moon appear to rise and set in the sky; therefore, the primary focus of assessment should be to identify apparent movement of the Sun and the Moon. However, appropriate assessments should also require students to *recall* from a picture or drawing the time of day based on the location of the Sun in the sky; or *recall* that the Sun and the Moon are lower in the sky when they rise and set.

Sun and Moon

1-3 The student will demonstrate an understanding of the features of the sky and the patterns of the Sun and the Moon. (Earth Science)

1-3.4 Illustrate changes in the Moon's appearance (including patterns over time).
Taxonomy level: 2.2-B Understand Conceptual Knowledge

Previous/Future knowledge: This is the first time that students have been introduced to the concept of the Moon's changes. Students have investigated patterns in kindergarten. This is foundational knowledge that will be further developed in 4th grade (4-3.6) when students illustrate the phases of the Moon and the Moon's effect on ocean tides. In 8th grade (8-4.4), students will explain the motions of Earth and the Moon and the effects of these motions as they orbit the Sun (including day, year, phases of the Moon, eclipses, and tides).

It is essential for students to know that the Moon's appearance changes over time.

- The Moon is a ball of rock that moves around Earth.
- The Moon goes around Earth about once every month.
- The Moon does not make its own light.
- We see the Moon because the Sun's light shines on it.
- As the Moon moves around Earth, it appears to change shape. For example, we can see the entire Moon, part of the Moon, or none of the Moon.
- The appearance of the Moon changes shape in a regular pattern each month.

It is not essential for students to collect data on other objects in the night sky, such as planets, or name the phases of the Moon.

Assessment Guidelines:
The objective of this indicator is to *illustrate* patterns of change in the Moon's appearance; therefore, the primary focus of assessment should be to use pictures, diagrams, or words to show aspects of these changes. However, appropriate assessments should also require students to *classify* by sequencing the patterns observed.